

T53Y

Vishay Sfernice



Miniature Trimmer Single-Turn Cermet



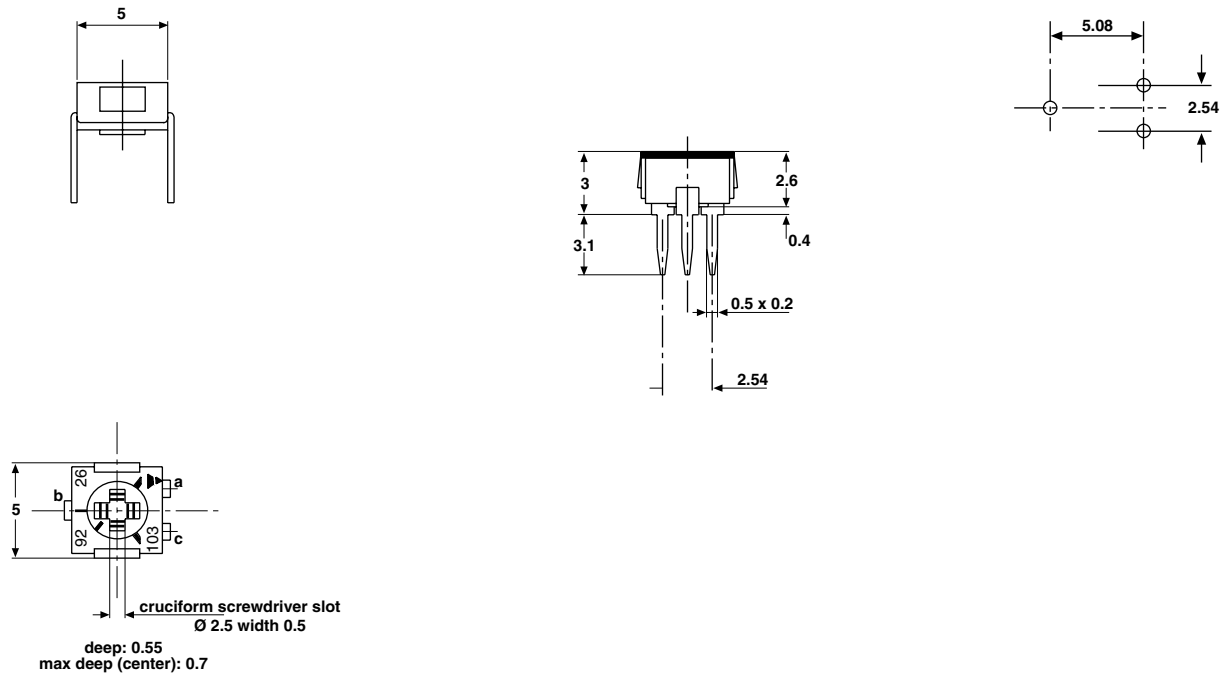
The T53 trimming potentiometer volumetric efficiency (5 x 5 x 2.7 mm) with high performance and stability. The T53 design is suitable for both manual or automatic operation.

FEATURES

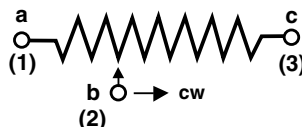
- Fully sealed
- 0.25 Watt at 70 °C
- Wide ohmic range (10 Ω to 1 M Ω)
- Low contact resistance variation (2 % or 3 Ω)
- Small size for optimum packing density
- Suitable for both manual or automatic operation
- For SMD version see TS53Y series



DIMENSIONS in millimeters



CIRCUIT DIAGRAM



Tolerances unless otherwise specified ± 0.25



ELECTRICAL SPECIFICATIONS		
Resistive Element	Cermet	
Electrical Travel	220° ± 15°	
Resistance Range	10 Ω to 1 MΩ	
Standard Series	1 - 2 - 5	
Tolerance Standard	± 20 %	
Power Rating	Linear	0.25 W at 70 °C
	Logarithmic	not applicable
Temperature Coefficient	See Standard Resistance Element Data	
Limiting Element Voltage (Linear Law)	200 V	
Contact Resistance Variation	2 % or 3 Ω	
End Resistance (Typical)	0.1 % or 3 Ω	
Dielectric Strength (RMS)	1000 V	
Insulation Resistance	10 ⁶ MΩ	
Specification	in accordance with CECC 41100	

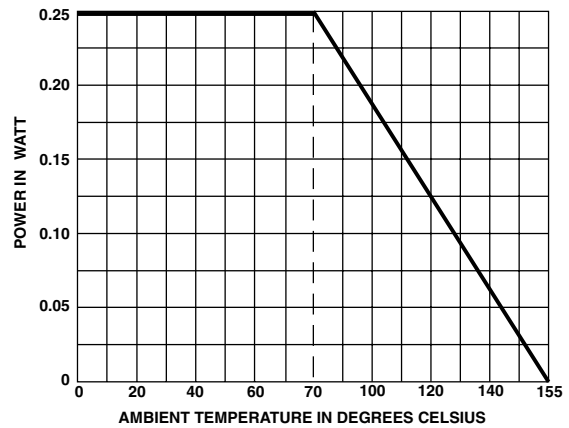
MECHANICAL SPECIFICATIONS

Mechanical Travel	270° ± 10°
Operating Torque (max. Ncm)	1.5
End Stop Torque (max. Ncm)	3.5
Unit Weight (max. g)	0.15

ENVIRONMENTAL SPECIFICATIONS

Temperature Range	- 55 °C to + 155 °C
Climatic Category	55/125/56
Sealing	enables cleaning IP67

POWER RATING CHART



PERFORMANCE			
TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS	
		$\frac{\Delta RT}{RT}$ (%)	$\frac{\Delta R_{1-2}}{R_{1-2}}$ (%)
Load Life	1000 hours at rated power 90'/30' - ambient temperature + 70 °C	± 2 % Contact resistance variation: $\Delta R < 1 \% R_n$	± 3 %
Moisture Resistance	MIL STD 202 Method 106 10 cycles of 24 hours constituted with damp heat - cold - vibrations	± 2 % Dielectric strength: 1000 V RMS Insulation resistance: > 10 ⁴ MΩ	± 3 %
Long Term Damp Heat	Temperature 40 °C - RH 93 % 56 days	± 2 % Dielectric strength: 1000 V RMS Insulation resistance: > 10 ⁴ MΩ	± 3 %
Thermal Shock	- 55 °C to + 125 °C - 5 cycles	± 1 %	$\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 2 \%$
Rotational Life (Electrical and Mechanical)	100 cycles - rated power	± 3 %	
Shock	MIL STD 202 Method 213/1 100 g - 6 ms 3 successive shocks in 3 directions	± 1 %	$\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 1 \%$
Vibration	MIL STD 202 Method 204/D 20 g - 12 hours	± 1 %	$\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 1 \%$



STANDARD RESISTANCE ELEMENT DATA				
STANDARD RESISTANCE VALUES	LINEAR LAW			TCR - 55 °C + 125 °C ppm/°C
	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. WIPER CUR.	
Ω	W	V	mA	
10	0.25	1.58	158	0 + 200
20	↓	2.24	112	
50		3.54	71	
100		5.00	50	± 100
200		7.07	35	
500		11.2	22	
1K		15.8	16	
2K		22.4	11	
5K		35.4	7	
10K		50.0	5	
20K		70.7	3.5	
50K	112	2.2		
100K	0.25	158	1.6	
200K	0.20	200	1.0	
500K	0.08	200	0.4	
1M	0.04	200	0.2	

MARKING

VISHAY trademark, ohmic value, manufacturing date.

The ohmic value is indicated by a 3 figure code, the first two are significant figures, the third one is the multiplier.

Example:
 100 = 10 Ω
 101 = 100 Ω
 102 = 1000 Ω
 503 = 50 000 Ω

The manufacturing date is indicated by four digits, the first two for the year, the last two for the week number.

SOLDERING RECOMMENDATIONS

see Application notes

PACKAGING
- In bulk (plastic box of 250 pieces), code BO250

ORDERING INFORMATION					
T53 SERIES	Y STYLE	500 kΩ OHMIC VALUE	± 20 % TOLERANCE	BO250 PACKAGING	e3 LEAD FINISH
					e3: pure Sn

SAP PART NUMBERING GUIDELINES													
T	5	3	Y	5	0	4	M	B	4	1	□	□	□
MODEL			STYLE	OHMIC VALUE			TOL	PACKAGING CODE			SPECIAL (IF APPLICABLE)		
See the end of this data book for conversion tables													



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